

Appendix F: Compatibility Determinations

Environmental Education and Interpretation /	285
Farming and Haying /	288
Fishing /	290
Hunting /	295
Mushroom and Berry Picking /	299
Wildlife Observation, Photography and Auto Tours /	301
Research /	304
Trapping /	307
Commercial Fishing /	312

COMPATIBILITY DETERMINATION

Use: Environmental Education and Interpretation

Refuge Name: Mark Twain National Wildlife Refuge Complex, including; Port Louisa NWR, Great River NWR, Clarence Cannon NWR, Two Rivers NWR, Middle Mississippi River NWR.

Establishing and Acquisition Authority(ies): 16 U.S.C. 715d; 16 U.S.C. 644; and 16 U.S.C. 460k-1

Refuge Purpose(s): "...for uses as an inviolate sanctuary, or for any other management purpose, for migratory birds." 16 U.S.C. 715d (Migratory Bird Conservation Act).

"...shall be administered by him (Secretary of the Interior) directly or in accordance with cooperative agreements...and in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon,..." 16 U.S.C. 664 (Fish and Wildlife Coordination Act).

"...suitable for - (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species..." 16 U.S.C. 460k-1 "...the Secretary...may accept and use...property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors..." 16 U.S.C. 460k-2 (Refuge Recreation Act (16 U.S.C. 460k-460k-4), as amended).

National Wildlife Refuge System Mission: "The Mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans."

Description of Use: To provide environmental education and interpretation aspects of the Mark Twain NWR Complex Refuges, the National Wildlife Refuge System and the Mississippi River corridor to the visiting public.

Environmental education and interpretation have been legislated as priority public uses for national wildlife refuges, where compatible with the refuge purpose. These uses are legitimate and appropriate public uses, and are dependent upon healthy wildlife populations. Mark Twain NWR Complex offers opportunities to educate visitors by providing interpretive materials associated with kiosks and observation platforms, brochures, programs, and hiking trails.

Availability of Resources: Funds have been available to maintain existing program level, and periodic funds have been available to adequately maintain existing facilities. Additional funds and/or staff would be required to cover expanded program opportunities or facilities outlined in the CCP.

Anticipated Impacts of the Use: No environmental impacts are expected to occur with current and projected educational and interpretive opportunities. Information kiosks will be erected, where appropriate, to acquaint visitors with the Mark Twain NWR Complex, the Mississippi River and the National Wildlife

Refuge System.

Individuals and groups who may use the refuge for educational purposes are not expected to significantly disturb wildlife or vegetation. Little or no erosion is predicted through use of hiking trails and refuge roads for permitted tours.

Controlled access and seasonal restrictions will further inhibit any predicted human disturbance to wildlife populations or threatened or endangered species. If, in the sound professional judgement of the refuge manager, an unacceptable level of wildlife disturbance is occurring during critical migratory periods, these activities will be temporarily curtailed. Human wildlife disturbances do not serve to fulfill the mission of the System, or the purposes of the refuge.

Litter resulting from auto tours, hiking trails or access points is expected to be minimal and will be periodically collected by refuge staff and/or volunteers.

Public Review and Comment: Determination prepared and reviewed in conjunction with Refuge Complex Comprehensive Conservation Plan (CCP) and Environmental Assessment.

(Minimum 2-week notice in newspaper(s) unless use is very minor with no impacts on Refuge purpose)

Determination:

☐ Use is Not Compatible

☒ Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility: The following stipulations are required to ensure compatibility:

1. Controlled access with signs and notices will be posted providing seasonal uses and stipulations.
2. Litter control and pick up will be maintained.
3. Trail and road maintenance, as necessary, to provide a safe and enjoyable experience.
4. Educational opportunities will be provided with kiosks and information signs.

Justification: Environmental education and interpretation are in compliance with the refuge's purpose. Additionally, these two uses are considered priority public uses, as legislated by the National Wildlife Refuge System Act of 1997. It serves to further the goals of the National Wildlife Refuge System and the approved Mark Twain Complex Comprehensive Conservation Plan.

No consumptive use of refuge resources occurs with environmental education and interpretation activities. Minimal disturbance to wildlife, vegetation and the refuge infrastructure will occur. These activities are seasonally regulated on many divisions to prevent disturbance to wildlife populations.

Signature:

Refuge Complex Manager: _____
(Signature and Date)

Concurrence:

Regional Chief: _____
(Signature and Date)

Mandatory 10- or 15-year Re-evaluation Date: 2016

(This determination was prepared as a programmatic review of the use outlined in the Refuge Complex 2001 Comprehensive Conservation Plan. Future Compatibility Determinations prepared to address new or different site specific uses will be prepared at the individual refuge and signed by the Refuge Manager, Complex Manager and Regional Chief.)

COMPATIBILITY DETERMINATION

Use: Farming & Haying

Refuge Name: Mark Twain National Wildlife Refuge Complex, including; Port Louisa NWR, Great River NWR, Clarence Cannon NWR, Two Rivers NWR, Middle Mississippi River NWR

Establishing and Acquisition Authority(ies): 16 U.S.C. 715d; 16 U.S.C. 644; and 16 U.S.C. 460K-1

Refuge Purpose(s): “...for uses as an inviolate sanctuary, or for any other management purpose, for migratory birds.” 16 U.S.C. 715d (Migratory Bird Conservation Act).

“...shall be administered by him (Secretary of the Interior) directly or in accordance with cooperative agreements...and in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon,...” 16 U.S.C. 664 (Fish and Wildlife Coordination Act).

“...suitable for - (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...” 16 U.S.C. 460k-1 “...the Secretary...may accept and use...property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors...” 16 U.S.C. 460k-2 (Refuge Recreation Act (16 U.S.C. 460k-460k-4), as amended).

National Wildlife Refuge System Mission: “The Mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

Description of Use: To plan and implement farming activities on those Divisions of the Mark Twain NWR Complex refuges. Conventional agricultural activities (ie. row cropping and haying) will be used as a habitat management tool to assist in meeting Refuge purposes. Primarily through the use of cooperative farming agreements and special use permits, grain and green browse will be provided for migratory birds and other wildlife. These crops will augment natural foods which can be depleted at critical times in the life cycles of wildlife and provide habitat diversity for a variety of species. Farming practices are also used periodically to set back undesirable habitat succession, particularly in moist soil habitats.

Availability of Resources: Funds have been available to maintain existing program level. Since the program is being greatly reduced additional funds or staff are not necessary to conduct farm program activities. However, the managed habitats that replace coop farming will require a greater degree of staff and fiscal resources to replace the values associated with the farm program.

Anticipated Impacts of the Use: Little or no erosion or degradation of the environment is expected to take place; the areas available for farming are flat fields and moist soil units with little gradient. Vegetative growth will be en-

hanced by farming operations and provide quality feed/cover for a variety of wildlife. All farming field operations will be timed so as to minimize disturbance to wildlife species, especially the nesting bald eagles, and to other forms of public use, such as wildlife viewing/photography, tours, etc.

Public Review and Comment: Determination prepared and reviewed in conjunction with Refuge Complex Comprehensive Conservation Plan (CCP) and Environmental Assessment.

Determination:

___ Use is Not Compatible

X Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility: The following stipulations are required to ensure compatibility:

1. Controlled access with signs, notices, and seasonal uses/stipulations.
2. Litter control/pickup, which is expected to be minimal.
3. Trail maintenance by either refuge staff or cooperative farmers to insure access over the least disruptive routes and minimize erosion or encroachment of adjoining use areas.
4. Restrictions/limitations on pesticide use in accordance with federal, state, and Service guidelines.

Justification: Use is in compliance with the Refuge Comprehensive Conservation Plan and furthers the goals and mission of the National Wildlife Refuge System and the Mark Twain NWR Complex.

The activity of farming on portions of the refuge, has resulted in no adverse effects to other refuge programs of wildlife populations. Appropriate signing and, at times, the complete closure of the refuge unit to all entry, will prevent disturbance to or disruption of, other activities/programs/populations.

Farming makes some consumptive use of refuge resources but does not degrade the refuge environment; the low use level does no damage to the habitat base, creates little or no potential for erosion (e.g. deep trails cut into hillsides or over levees) and has little disturbance impact on wildlife populations because the use is zoned as to area and time.

Signature:

Refuge Complex Manager: _____
(Signature and Date)

Concurrence:

Regional Chief: _____
(Signature and Date)

COMPATIBILITY DETERMINATION

Use: Fishing

Refuge Name: Mark Twain National Wildlife Refuge Complex, including; Port Louisa NWR, Great River NWR, Clarence Cannon NWR, Two Rivers NWR, Middle Mississippi River NWR

Establishing and Acquisition Authority(ies): 16 U.S.C. 715d; 16 U.S.C. 644; and 16 U.S.C. 460k-1

Refuge Purpose(s): “...for uses as an inviolate sanctuary, or for any other management purpose, for migratory birds.” 16 U.S.C. 715d (Migratory Bird Conservation Act).

“...shall be administered by him (Secretary of the Interior) directly or in accordance with cooperative agreements...and in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon,...” 16 U.S.C. 664 (Fish and Wildlife Coordination Act).

“...suitable for - (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...” 16 U.S.C. 460k-1 “...the Secretary...may accept and use...property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors...” 16 U.S.C. 460k-2 (Refuge Recreation Act (16 U.S.C. 460k-460k-4), as amended).

National Wildlife Refuge System Mission: “The Mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

Description of Use: To provide public sport fishing opportunities on Mark Twain NWR Complex refuges.

All sport fishing activities, including permitted methods of taking, limits, species and open/closed seasons will be consistent with applicable state regulations. Enforcement efforts will be jointly conducted by the state conservation department officers and U.S. Fish and Wildlife Service officers.

Boat and bank fishing is permitted, as provided by refuge special regulations and published in 50 CFR. Some areas may be closed during the fall and spring migratory bird seasons, which varies between refuges, to provide disturbance-free resting and feeding areas for ducks and geese.

Sport fishing on the Mark Twain NWR Complex refuges is an integral part of the overall public use program along this major river and navigation corridor and serves the needs of several hundred thousand visitors each year. Public use, and specifically sport fishing activities, will be improved with boat ramp construction, parking areas, information kiosks, and accessible fishing piers, where appropriate within the floodplain. As with many of our projects and uses, this activity should serve to inform the public of the need for stewardship of public lands and waters

and increase the awareness of our natural resources.

Fishing has been legislated as a priority public use on national wildlife refuges, where compatible with the refuge purpose. This use is legitimate and appropriate, and is dependent upon healthy fish populations. Mark Twain NWR Complex offers many opportunities for sport fishing.

Refuge signs will be posted to ensure that refuge visitors are aware of refuge regulations, closed areas and boundaries. Roadways and levee tops are open year-round, except as designated by posted Area Closed signs, for walk-in fishermen.

Fishing is generally low impact recreational activity, is spread over a wide area which prevents overuse or crowding, and is regulated closely by both state and federal statutes.

Availability of Resources: Funds have been available to maintain existing program level, and periodic funds have been available to adequately maintain existing facilities. Additional funds and/or staff would be required to cover expanded program opportunities or facilities outlined in the CCP.

Anticipated Impacts of the Use: No threatened or endangered species will be impacted by this use. The awareness gained by the visiting public of the national wildlife refuge and its programs should help develop an informed user group that will support our programs and long-range goals.

Litter and incidental vandalism resulting from sport fishing use is expected to be minimal and will be handled by refuge officers and volunteers. Minor repair or rehabilitation of facilities will be attended to, as needed.

No degradation of the environment is expected to occur. Bank fishing will take place on areas with shallow slopes, mostly on existing foot paths or access trails. Erosion and damage to vegetation will be minimal. No wake zones will be established where necessary, to protect vulnerable shorelines from erosion by passing boats.

Public Review and Comment: Determination prepared and reviewed in conjunction with Refuge Complex Comprehensive Conservation Plan (CCP) and Environmental Assessment.

Determination:

☐ Use is Not Compatible

☒ Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility: The following stipulations are required to ensure compatibility:

1. Controlled access points with appropriate signs and notices will limit environmental disturbance;
2. Litter control will be part of routine maintenance by refuge staff or volunteers;

3. Cooperation with state fisheries biologists in creek surveys or sampling will provide data to the refuge for management purposes.

Justification: This use is in compliance with the Refuge Recreation Act. It furthers the goals of the National Wildlife Refuge System and the Mark Twain Complex, and serves to provide educational opportunities to the visiting public. This use is planned and approved in the Refuge Comprehensive Conservation Plan. Coordination with the Service and State fisheries offices for monitoring fish populations and habitat conditions is the responsibility of each individual Complex Refuge Manager. All fishing programs will be subject to yearly review and approval.

Signature:

Refuge Complex Manager: _____
(Signature and Date)

Concurrence:

Regional Chief: _____
(Signature and Date)

Mandatory 10- or 15-year Re-evaluation Date: 2016

(This determination was prepared as a programmatic review of the use outlined in the Refuge Complex 2001 Comprehensive Conservation Plan. Future Compatibility Determinations prepared to address new or different site specific uses will be prepared at the individual refuge and signed by the Refuge Manager, Complex Manager and Regional Chief)

COMPATIBILITY DETERMINATION

Use: Hiking

Refuge Name: Mark Twain National Wildlife Refuge Complex, including; Port Louisa NWR, Great River NWR, Clarence Cannon NWR, Two Rivers NWR, Middle Mississippi River NWR

Establishing and Acquisition Authority(ies): 16 U.S.C. 715d; 16 U.S.C. 644; and 16 U.S.C. 460k-1

Refuge Purpose(s): “...for uses as an inviolate sanctuary, or for any other management purpose, for migratory birds.” 16 U.S.C. 715d (Migratory Bird Conservation Act).

“...shall be administered by him (Secretary of the Interior) directly or in accordance with cooperative agreements...and in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon,...” 16 U.S.C. 664 (Fish and Wildlife Coordination Act).

“...suitable for - (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...” 16 U.S.C. 460k-1 “...the Secretary...may accept and use...property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors...” 16 U.S.C. 460k-2 (Refuge Recreation Act (16 U.S.C. 460k-460k-4), as amended).

National Wildlife Refuge System Mission: “The Mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

Description of Use: To provide for hiking opportunities on those Divisions of the Mark Twain NWR Complex refuges..

Except as prohibited by appropriate “closed area” signs or notification, areas on the Mark Twain NWR Complex are open to hiking, year long, with some exceptions to provide for undisturbed sanctuary for nesting American bald eagles, and migrating waterfowl.

Refuge roadways, access trails, dike tops and levees are open to hiking as well as “cross-country” areas with no defined trail systems. Insect populations in the summer months and terrain are limiting physical factors.

Some limited interpretive signing, information kiosk, and leaflets will enhance the use on certain areas. This activity, together with appropriate interpretation, will promote community stewardship of our public lands, increase public support and awareness of our rich wildlife/wildlands heritage, and provide for increased public use opportunities in the immediate area.

Hiking activities, when properly regulated by refuge signs and notices, will NOT conflict with other Refuge goals. It is expected to enhance overall Service image

in the communities and enhance other FWS initiatives.

Availability of Resources: Funds have been available to maintain existing program level, and periodic funds have been available to adequately maintain existing facilities. Additional funds and/or staff would be required to cover expanded program opportunities or facilities outlined in the CCP.

Anticipated Impacts of the Use: Hiking throughout the refuge units will provide the public with an opportunity to view wildlife refuge programs, serve to educate and inform our visitors, and create an advocacy group supportive of our goals and purposes. Through appropriate demonstration and interpretation of programs the “hiking” public will be able to gain an understanding of the interrelationships that link wildlife/wildlands with their habitats. Hiking, when properly regulated in time and space, is an environmentally friendly activity that does not detract from the area.

Controlled access and seasonal restrictions will limit any human disturbance to wildlife populations or threatened or endangered plant species.

Litter, resulting from this hiking use, is expected to be minimal and will be periodically collected by refuge staff and volunteers. Trash receptacles and information signing will be placed at strategic locations.

Little or no erosion or degradation of the environment is expected to take place; the areas open to hiking are flat fields and timbered areas with little gradient. Vegetation should not suffer any great degree of disturbance or is expected to rebound quickly. Heavy fescue sod on the levee and dike tops can withstand moderate to heavy use during the growing season with no ill effect.

Public Review and Comment: Determination prepared and reviewed in conjunction with Refuge Complex Comprehensive Conservation Plan (CCP) and Environmental Assessment.

(Minimum 2-week notice in newspaper(s) unless use is very minor with no impacts on Refuge purpose)

Determination:

☐ Use is Not Compatible

☒ Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility: The following stipulations are required to ensure compatibility:

1. Controlled access with signs and notices and seasonal uses/stipulations.
2. Litter control/pickup, education of the using public.
3. Trail maintenance/monitoring.

Justification: Use is in the compliance with the Refuge Recreation Act and furthers the goals and objectives of the Mark Twain Complex Comprehensive Conservation Plan.

The activity of hiking across portions of the refuge, in the very low numbers experienced over the past years (less than ten “hikers” per year on any given division of the refuge) has resulted in no adverse effects to other refuge programs of wildlife populations. Appropriate signing and, at times, the complete closure of the refuge unit to all entry will eliminate any disturbance to or disruption of other activities/programs/populations.

Hiking makes no consumptive use of any resources and does not degrade the refuge environment; the almost non-existent use level does no damage to the ground cover, creates no potential for erosion (e.g. deep trails cut into hillsides or over levees) and has little disturbance impact on wildlife populations because the use is zoned as to area and time.

Signature:

Refuge Complex Manager: _____
(Signature and Date)

Concurrence:

Regional Chief: _____
(Signature and Date)

Mandatory 10- or 15-year Re-evaluation Date: 2016

(This determination was prepared as a programmatic review of the use outlined in the Refuge Complex 2001 Comprehensive Conservation Plan. Future Compatibility Determinations prepared to address new or different site specific uses will be prepared at the individual refuge and signed by the Refuge Manager, Complex Manager and Regional Chief)

COMPATIBILITY DETERMINATION

Use: Hunting

Refuge Name: Mark Twain National Wildlife Refuge Complex, including; Port Louisa NWR, Great River NWR, Clarence Cannon NWR, Two Rivers NWR, Middle Mississippi River NWR

Establishing and Acquisition Authority(ies): 16 U.S.C. 715d; 16 U.S.C. 644; and 16 U.S.C. 460k-1

Refuge Purpose(s): “...for uses as an inviolate sanctuary, or for any other management purpose, for migratory birds.” 16 U.S.C. 715d (Migratory Bird Conservation Act).

“...shall be administered by him (Secretary of the Interior) directly or in accordance with cooperative agreements...and in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon,...” 16 U.S.C. 664 (Fish and Wildlife Coordination Act).

“...suitable for - (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...” 16 U.S.C. 460k-1 “...the Secretary...may accept and use...property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors...” 16 U.S.C. 460k-2 (Refuge Recreation Act (16 U.S.C. 460k-460k-4), as amended).

National Wildlife Refuge System Mission: “The Mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

Description of Use: To conduct big game, upland game and migratory bird hunting on selected divisions of the Mark Twain NWR Complex refuges in Iowa, Illinois and Missouri.

All hunting programs conducted on refuge lands and waters are in compliance with applicable state and special refuge regulations. In some cases, refuge hunts are in partnership with the state conservation department. For instance, the Illinois Department of Natural Resources assists Great River NWR with the Delair Special Deer Hunt by processing permits through their office. Daily supervision of the hunt is provided by refuge and state officers. In addition, waterfowl blinds permitted within Long Island Division waters are administered by Illinois Department of Natural Resources.

Hunting has been legislated as a priority public use on national wildlife refuges, where compatible with the refuge purpose. This use is legitimate and appropriate, and is dependent upon healthy wildlife populations. Several divisions of the Mark Twain NWR Complex offer opportunities for hunting.

Hunter safety is of paramount concern to refuge staff, hunters afield, and refuge neighbors. Hunting seasons are further regulated on refuge lands by time and

space so as to reduce or eliminate any conflicts with other public uses or wildlife species.

Big game hunting for whitetail deer is permitted on selected divisions of the Mark Twain NWR Complex. Initiation of additional refuge deer hunting programs will be employed after it has been biologically determined that habitat management objectives cannot be achieved due to an excessive population level. Hunting for deer will be primarily a herd reduction tool to decrease damage to habitat and reduce potential for vehicle/deer collisions.

Small upland game hunting is permitted in accordance with state seasons and regulations. The refuge is closed to all nighttime hunting of furbearers and frogs.

Migratory bird hunting is permitted on selected divisions of the Mark Twain NWR Complex. Applicable state and refuge regulations are enforced. Only temporary or portable blinds may be constructed.

Upland bird hunting for wild turkeys, ring-necked pheasant and bobwhite quail is permitted on some refuge divisions, under applicable state regulations. Where bird hunting is permitted, the use of steel or other approved non-toxic shot is required, except for turkeys.

Properly administered hunting programs can instill a healthy regard and view of the wildlife resource and assist in helping us meet refuge and Service management goals. These user groups can become a vocal advocacy for management when they understand their role in the larger picture.

Availability of Resources: Funds have been available to maintain existing program level, and periodic funds have been available to adequately maintain existing facilities. Additional opportunity outlined in the CCP is not a significant change from past management and will not require additional funds, per say. Law enforcement coverage remains a concerns at each refuge in the Complex and will be monitored to ensure that adequate enforcement is available to maintain compatibility of the program.

Anticipated Impacts of the Use: No negative physical impacts on refuge lands or interests are expected to occur. Refuge officers will monitor and regulate numbers of participants to levels consistent with safe use of a specific area and motorized equipment will be strictly limited to surfaced roads or prepared parking areas. All travel throughout the refuge divisions will be by foot, only. Boat access sites will be limited to those in existing public use areas or those developed by the refuge. Litter and other trash will be disposed of, as necessary.

Properly regulated hunting programs will provide a positive benefit by, in some cases, reducing population levels to the carrying capacity of the land, or division, where they are found.

Public Review and Comment: Determination prepared and reviewed in conjunction with Refuge Complex Comprehensive Conservation Plan (CCP) and Environmental Assessment.

(Minimum 2-week notice in newspaper(s) unless use is very minor with no impacts on Refuge purpose.)

Determination:

___ Use is Not Compatible

X Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility: The following stipulations are required to ensure compatibility:

1. Population data will be obtained prior to initiating hunting programs to ensure a healthy population exists, which may be removed without depleting the resource below a point of normal recruitment/recovery.
2. Law enforcement patrols will be conducted by state and federal officers to ensure compliance with hunting regulations and refuge special use regulations.
3. Any hunting program may be immediately canceled if, in the judgement of the refuge manager, it causes disturbance to wildlife populations, or harm to other resources beyond that associated with normal entry/access to the area.
4. Litter will be collected, as necessary, by refuge staff and/or volunteers. Special signs will be erected where necessary, to provide information to hunters regarding regulations, boundaries and closed areas.

Justification: Public hunting on selected areas of the Mark Twain Complex in the states of Iowa, Illinois and Missouri, is an acceptable form of wildlife-oriented recreation which has been found compatible with the purpose for which the refuge was established. Hunting of big game animals is a viable management tool in reducing the numbers of whitetail deer to levels consistent with achieving habitat management objectives and with social and safety factors (deer/vehicle collisions in the vicinity of the refuge divisions). When the stipulations listed above are fulfilled, little or no adverse effects to other refuge programs or wildlife species will occur.

Signature:

Refuge Complex Manager: _____
(Signature and Date)

Concurrence:

Regional Chief: _____
(Signature and Date)

Mandatory 10- or 15-year Re-evaluation Date: 2016

(This determination was prepared as a programmatic review of the use outlined in the Refuge Complex 2001 Comprehensive Conservation Plan. Future Compatibility Determinations prepared to address new or different site specific uses will be prepared at the individual refuge and signed by the Refuge Manager, Complex Manager and Regional Chief)

COMPATIBILITY DETERMINATION

Use: Mushroom and berry picking

Refuge Name: Mark Twain National Wildlife Refuge Complex, including; Port Louisa NWR, Great River NWR, Clarence Cannon NWR, Two Rivers NWR, Middle Mississippi River NWR

Establishing and Acquisition Authority(ies): 16 U.S.C. 715d; 16 U.S.C. 644; and 16 U.S.C. 460k-1

Refuge Purpose(s): “...for uses as an inviolate sanctuary, or for any other management purpose, for migratory birds.” 16 U.S.C. 715d (Migratory Bird Conservation Act).

“...shall be administered by him (Secretary of the Interior) directly or in accordance with cooperative agreements...and in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon,...” 16 U.S.C. 664 (Fish and Wildlife Coordination Act).

“...suitable for - (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...” 16 U.S.C. 460k-1 “...the Secretary...may accept and use...property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors...” 16 U.S.C. 460k-2 (Refuge Recreation Act (16 U.S.C. 460k-460k-4), as amended).

National Wildlife Refuge System Mission: “The Mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

Description of Use: Mark Twain Complex refuges will provide opportunities for gathering mushrooms and wild berries on designated lands each year during periods that do not interfere with other uses, or detract from wildlife values. Collection of these plant products is not a wildlife-dependent recreational use. However for some people these activities are traditional family oriented outings which provide an opportunity for the refuge to offer wildlife observation and interpretive services to those who enjoy the hunt in undeveloped areas.

Availability of Resources: There are no staff or budget constraints to implement mushroom and berry picking opportunities on designated Complex lands. Use has been low and will be monitored for change in that level.

Anticipated Impacts of the Use: No threatened or endangered species will be impacted by this use. Mushroom hunting is usually directed to open understory areas that cause very little disturbance, while late season berry hunting is generally after bird all nesting activity. The awareness gained by the visiting public of the national wildlife refuge and its programs should help develop an informed user group that will support our programs and long-range goals.

Habitat damage, wildlife disturbance, litter and incidental vandalism resulting

from these picking uses is expected to be minimal and will be handled by refuge officers and volunteers. Picking activities have not resulted in any problems such as these in the past.

Public Review and Comment: Determination prepared and reviewed in conjunction with Refuge Complex Comprehensive Conservation Plan (CCP) and Environmental Assessment.

Determination:

____ Use is Not Compatible

X Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility: The following stipulations are required to ensure compatibility:

1. Controlled access points with appropriate signs and notices will limit environmental disturbance;
2. Litter control will be part of routine maintenance by refuge staff or volunteers;
3. Mushrooms and berries must be collected for personal consumption and may not be sold commercially.

Justification: This use is in compliance with the Refuge Recreation Act. It furthers the goals of the National Wildlife Refuge System and the Mark Twain Complex, and serves to provide wildlife observation and educational opportunities to the visiting public. This use is planned and approved in the Refuge Comprehensive Conservation Plan. All picking programs will be subject to yearly review and approval.

Signature:

Refuge Complex Manager: _____
(Signature and Date)

Concurrence:

Regional Chief: _____
(Signature and Date)

Mandatory 10- or 15-year Re-evaluation Date: 2016

(This determination was prepared as a programmatic review of the use outlined in the Refuge Complex 2001 Comprehensive Conservation Plan. Future Compatibility Determinations prepared to address new or different site specific uses will be prepared at the individual refuge and signed by the Refuge Manager, Complex Manager and Regional Chief)

COMPATIBILITY DETERMINATION

Use: Wildlife Observation, Photography and Auto Tours

Refuge Name: Mark Twain National Wildlife Refuge Complex, including; Port Louisa NWR, Great River NWR, Clarence Cannon NWR, Two Rivers NWR, Middle Mississippi River NWR

Establishing and Acquisition Authority(ies): 16 U.S.C. 715d; 16 U.S.C. 644; and 16 U.S.C. 460k-1

Refuge Purpose(s): “...for uses as an inviolate sanctuary, or for any other management purpose, for migratory birds.” 16 U.S.C. 715d (Migratory Bird Conservation Act).

“...shall be administered by him (Secretary of the Interior) directly or in accordance with cooperative agreements...and in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon,...” 16 U.S.C. 664 (Fish and Wildlife Coordination Act).

“...suitable for - (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...” 16 U.S.C. 460k-1 “...the Secretary...may accept and use...property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors...” 16 U.S.C. 460k-2 (Refuge Recreation Act (16 U.S.C. 460k-460k-4), as amended).

National Wildlife Refuge System Mission: “The Mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

Description of Use: To provide a variety of wildlife observation options on the Mark Twain NWR Complex refuges by offering observation platforms with viewing scopes, photo opportunities and auto tours.

Wildlife observation and photography have been legislated as priority public uses for national wildlife refuges, where compatible with the refuge purpose. These uses are legitimate and appropriate public uses, and are dependent upon healthy wildlife populations. Mark Twain NWR Complex offers many opportunities for enhance observations of wildlife and photography within some divisions.

Refuge signs will be posted to ensure that refuge visitors are aware of refuge regulations, closed areas and boundaries. Auto tour routes will be clearly posted to maintain a safe environment for visitors, staff and wildlife.

Roadway, levee tops and hiking trails are open year-round, except as designated by posted Area Closed signs, for wildlife observation.

Availability of Resources: Funds have been available to maintain existing program level, and periodic funds have been available to adequately maintain existing facilities. Additional funds and/or staff would be required to cover

expanded program opportunities or facilities outlined in the CCP.

Anticipated Impacts of the Use: No negative physical impacts are expected to occur from the allowance of wildlife observation and photography opportunities on refuge lands. Providing enhanced wildlife observation and photography opportunities will present the public with educational and informative encounters with our refuges. It will further serve to create an advocacy group supportive of our goals and purposes.

Controlled access and seasonal restrictions will limit any human disturbance to wildlife populations or threatened or endangered species. If, in the sound professional judgement of the refuge manager, an unacceptable level of wildlife disturbance is occurring during critical migratory periods, these activities will be temporarily curtailed. Human wildlife disturbances do not serve to fulfill the mission of the System, or the purposes of the refuge.

Litter resulting from auto tours, hiking trails or access points, is expected to be minimal and will be periodically collected by refuge staff and/or volunteers.

Little or no erosion or degradation of the environment is expected to occur with enhanced wildlife observation, photography or auto tour route uses.

Public Review and Comment: Determination prepared and reviewed in conjunction with Refuge Complex Comprehensive Conservation Plan (CCP) and Environmental Assessment.

(Minimum 2-week notice in newspaper(s) unless use is very minor with no impacts on Refuge purpose)

Determination:

☐ Use is Not Compatible

☒ Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility: The following stipulations are required to ensure compatibility:

1. Controlled access with signs and notices will be posted providing seasonal uses and stipulations.
2. Litter control and pick up will be maintained.
3. Trail and road maintenance, as necessary, to provide a safe and enjoyable experience.
4. Educational opportunities will be provided with kiosks and information signs.

Justification: Wildlife observation, photography and auto tour routes are in compliance with the Refuge Recreation Act. In addition, wildlife observation and photography are considered priority public uses, as legislated by the National Wildlife Refuge System Act of 1997, and serves to further the goals and objectives of the approved Mark Twain Complex Comprehensive Conservation Plan.

Use of refuge divisions for wildlife observation, photography and auto tours requires no consumptive use of any resource and does not degrade the refuge environment. Little or no erosion occurs on hiking trails, levees or roads within the divisions. There is minimal disturbance impact on wildlife populations during these activities because the use is restricted by seasonal factors.

Signature:

Refuge Complex Manager: _____
(Signature and Date)

Concurrence:

Regional Chief: _____
(Signature and Date)

Mandatory 10- or 15-year Re-evaluation Date: 2016

(This determination was prepared as a programmatic review of the use outlined in the Refuge Complex 2001 Comprehensive Conservation Plan. Future Compatibility Determinations prepared to address new or different site specific uses will be prepared at the individual refuge and signed by the Refuge Manager, Complex Manager and Regional Chief)

COMPATIBILITY DETERMINATION

Use: Research

Refuge Name: Mark Twain National Wildlife Refuge Complex, including; Port Louisa NWR, Great River NWR, Clarence Cannon NWR, Two Rivers NWR, Middle Mississippi River NWR

Establishing and Acquisition Authority(ies): 16 U.S.C. 715d; 16 U.S.C. 644; and 16 U.S.C. 460k-1

Refuge Purpose(s): “...for uses as an inviolate sanctuary, or for any other management purpose, for migratory birds.” 16 U.S.C. 715d (Migratory Bird Conservation Act).

“...shall be administered by him (Secretary of the Interior) directly or in accordance with cooperative agreements...and in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon,...” 16 U.S.C. 664 (Fish and Wildlife Coordination Act).

“...suitable for - (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...” 16 U.S.C. 460k-1 “...the Secretary...may accept and use...property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors...” 16 U.S.C. 460k-2 (Refuge Recreation Act (16 U.S.C. 460k-460k-4), as amended).

National Wildlife Refuge System Mission: “The Mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

Description of Use: To provide for legitimate RESEARCH needs and studies on lands and waters of the Mark Twain NWR Complex refuges.

Research proposals are, typically, developed by area universities and colleges in support of refuge special needs or with refuge staff input into larger scale proposals that may utilize refuge lands and waters as a base of study. Other than staff review time, these research proposals and resultant studies are the responsibility and expense of the sponsoring school or group.

Studies vary from a few weeks to several months in duration (limited ones may develop over two or three years but these are exceptions), are quite labor intensive with several months after the field seasons devoted to refining data and publishing results. All of this accomplished with little or not direct involvement of refuge staff, or at most, modest staff time to review a manuscript.

Research studies, to be conducted on the refuge, must meet the criteria found in the refuge manual and the research outline/proposal must conform to FWS guidelines. Only those studies that provide practical management data or can be used to further the science of wildlife management are screened and approved.

Availability of Resources: Funds have been available to maintain existing program level, which has been periodic and low impact. It is not anticipated that resources will be inadequate to address the future research program level outlined in the CCP.

Anticipated Impacts of the Use: Impacts on refuge purposes are all determined to be positive. Through properly applied research our “on the ground” management programs can benefit the resource with a minimum of wasted or misdirected effort. As we move into a more holistic, ecosystem-based management paradigm, the baseline data utilized in decision making must be sound and defensible; the research work will provide this key tool.

Public Review and Comment: Determination prepared and reviewed in conjunction with Refuge Complex Comprehensive Conservation Plan (CCP) and Environmental Assessment.

(Minimum 2-week notice in newspaper(s) unless use is very minor with no impacts on Refuge purpose)

Determination:

☐ Use is Not Compatible

☒ Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility: The following stipulations are required to ensure compatibility:

1. Studies proposed by outside agencies/institutions will be reviewed and approved by the Refuge Manager.
2. All proposals must conform to FWS guidelines and be applicable to Mark Twain NWR Complex management needs and of the needs of the larger scientific community.
3. No or very limited funding will be required of the refuge.
4. Special Use Permits (SUP) will be issued for each non-Service conducted project to control of timing for least disturbance to wildlife or other refuge use.

Justification: This use is in compliance with the Refuge Administration Act. It furthers the goals of the National Wildlife Refuge System and the Mark Twain Complex Comprehensive Conservation Plan. It will add to the base of knowledge in the field of wildlife management and will create no adverse affects on other refuge programs or wildlife populations. Research activities are noted in the Mark Twain National Wildlife Refuge Complex Comprehensive Conservation Plan as being needed to develop and refine management strategies.

Signature: Refuge Complex Manager:_____

(Signature and Date)

Concurrence: Regional Chief:_____

(Signature and Date)

Mandatory 10- or 15-year Re-evaluation Date: 2016

(This determination was prepared as a programmatic review of the use outlined in the Refuge Complex 2001 Comprehensive Conservation Plan. Future Compatibility Determinations prepared to address new or different site specific uses will be prepared at the individual refuge and signed by the Refuge Manager, Complex Manager and Regional Chief)

COMPATIBILITY DETERMINATION

Use: Trapping

Refuge Name: Mark Twain National Wildlife Refuge Complex, including; Port Louisa NWR, Great River NWR, Clarence Cannon NWR, Two Rivers NWR, Middle Mississippi River NWR

Establishing and Acquisition Authority(ies): 16 U.S.C. 715d; 16 U.S.C. 644; and 16 U.S.C. 460k-1

Refuge Purpose(s): “...for uses as an inviolate sanctuary, or for any other management purpose, for migratory birds.” 16 U.S.C. 715d (Migratory Bird Conservation Act).

“...shall be administered by him (Secretary of the Interior) directly or in accordance with cooperative agreements...and in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon,...” 16 U.S.C. 664 (Fish and Wildlife Coordination Act).

“...suitable for - (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...” 16 U.S.C. 460k-1 “...the Secretary...may accept and use...property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors...” 16 U.S.C. 460k-2 (Refuge Recreation Act (16 U.S.C. 460k-460k-4), as amended).

National Wildlife Refuge System Mission: “The Mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

Description of Use: To conduct trapping solely for wildlife management objective on selected divisions of the Mark Twain NWR Complex refuges in Iowa, Illinois and Missouri.

Trapping will be used on the refuge as a management tool to address muskrat and beaver created problems within the Refuge infrastructure. Muskrats often burrow into roads, ditches, and dikes. The resulting holes and cave-ins along refuge roadways increases maintenance, creates safety hazards to visitors and staff, and restricts the refuge’s ability to regulate water levels. Plugging of water control regulatory devices including water control structures and damage to our delivery ditches, often occurs by beaver and muskrat. Without the water regulatory ability, the refuge can not meet our primary goal to provide migratory bird habitat. The altered impoundments also create drainage restrictions and can potentially cause problems to neighboring private landowners. Such restriction of drainage on private property can be a violation of state law.

Trapping is not anticipated to occur on an annual basis. The infrequent need to trap will be assessed individually through a case by case determination by the refuge manager or is or her representative. When instituted, trapping will be very restrictive and only authorized by refuge personnel or through the issuance

of a Special Use Permit (SUP). The permit offers the refuge manager the opportunity to specifically target offensive individuals and regulate trapping techniques and methods more restrictively than state regulations.

Availability of Resources: Funds have been available to conduct the limited program conducted on Complex refuges. The CCP does not proposed an expansion of this activity.

Anticipated Impacts of the Use: Disturbance of resting waterfowl is a factor to be considered. The activity of a trapper on the refuge will result in disturbance of waterfowl; however, the disturbance is temporary in nature and confined to a matter of minutes. Waterfowl populations become accustomed to limited activity and simply change resting areas when disturbed, but they generally do not leave the refuge during these periods. The birds quickly return to their original resting areas soon after the disturbance has ended.

The capture of non-targeted animals such as bald eagles can potentially exist. Through proper education and training, this threat can be nearly eliminated by addressing the proper location of traps, and prohibiting such techniques as exposed baits, the use of fish for bait, and multiple sets.

No negative physical impacts on refuge lands or interest are expected to occur. In fact, the ability to effectively manage for migratory birds will be enhanced. Specifically, water management will be enhanced as water delivery improves and mast trees and bottomland hardwood forest will be protected.

Potentially most importantly, visitor and staff safety will be significantly improved by the minimization of damage to refuge roadways. The refuge's relationship with neighboring landowners will improve as we respond to their legally binding needs.

Public Review and Comment: Determination prepared and reviewed in conjunction with Refuge Complex Comprehensive Conservation Plan (CCP) and Environmental Assessment.

(Minimum 2-week notice in newspaper(s) unless use is very minor with no impacts on Refuge purpose)

Determination:

☐ Use is Not Compatible

☒ Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility: The following stipulations are required to ensure compatibility:

1. Trapping will only be conducted following the thorough inspection by the refuge manager or his or her designated representative.
2. Trapping will only occur by refuge personnel or conducted by an outside individual through the use of a SUP.

3. Compliance of the conditions of the SUP will be closely monitored by refuge staff.
4. Trapping will not occur if the population is at such low numbers that trapping may jeopardize the ability of the local population to sustain itself.
5. Trapping shall be targeted only to the species of concern.
6. A Weekly Fur Catch Report will be completed and submitted to the refuge manager by the following Wednesday of each week.

Justification: Trapping on selected areas of the Mark Twain Complex in the states of Iowa, Illinois and Missouri, has been found compatible with the purpose for which the refuge was established. Trapping is a viable management tool in reducing damage to refuge infrastructure, increasing visitor and staff safety, and ensuring compliance with private landowner drainage concerns. When the stipulations listed above are fulfilled, little or no adverse effects to other refuge programs or wildlife species will occur.

Signature:

Refuge Complex Manager: _____
(Signature and Date)

Concurrence:

Regional Chief: _____
(Signature and Date)

Mandatory 10- or 15-year Re-evaluation Date: 2016

(This determination was prepared as a programmatic review of the use outlined in the Refuge Complex 2001 Comprehensive Conservation Plan. Future Compatibility Determinations prepared to address new or different site specific uses will be prepared at the individual refuge and signed by the Refuge Manager, Complex Manager and Regional Chief)

COMPATIBILITY DETERMINATION

Use: Commercial Fishing

Refuge Name: Mark Twain National Wildlife Refuge Complex, including; Port Louisa NWR, Great River NWR, Clarence Cannon NWR, Two Rivers NWR, Middle Mississippi River NWR.

Establishing and Acquisition Authority(ies): 16 U.S.C. 715d; 16 U.S.C. 644; and 16 U.S.C. 460k-1

Refuge Purpose(s): "...for uses as an inviolate sanctuary, or for any other management purpose, for migratory birds." 16 U.S.C. 715d (Migratory Bird Conservation Act).

"...shall be administered by him (Secretary of the Interior) directly or in accordance with cooperative agreements...and in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon,..." 16 U.S.C. 664 (Fish and Wildlife Coordination Act).

"...suitable for - (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species..." 16 U.S.C. 460k-1 "...the Secretary...may accept and use...property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors..." 16 U.S.C. 460k-2 (Refuge Recreation Act (16 U.S.C. 460k-460k-4), as amended).

National Wildlife Refuge System Mission: "The Mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans."

Description of Use: To permit the harvest of fish, on a commercial basis, for all species listed on state (either Illinois, Iowa or Missouri depending on location of activity) game and fish code as being legal for commercial take, except that some species, such as paddlefish, may not be taken or possessed on refuge units. Permits would be required on refuge units which include isolated wetlands or other controlled aquatic units. Refuge areas which are open to river navigation may not require SUP where adequate state regulations protect compatibility.

Availability of Resources: Funds have been available to maintain existing program level, which has been periodic and low impact on staff or station fiscal resources. It is not anticipated that funds would be inadequate to manage this use in the future as it is outlined in the CCP.

Anticipated Impacts of the Use: No negative environmental impacts are expected to occur with current and projected use levels, and any impacts realized will be managed to result in positive benefits to the refuge resources. The permitted activities covered by this determination and managed through Special Use Permits are supportive of CCP Goals for habitat management and water quality.

Public Review and Comment: Determination prepared and reviewed in conjunction with Refuge Complex Comprehensive Conservation Plan (CCP) and Environmental Assessment.

Determination:

___ Use is Not Compatible

X Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility: The following stipulations are required to ensure compatibility:

1. Specific dates of use will be included in SUP to ensure compatibility with migratory bird use periods.
2. Original SUP, not photocopy, must be in the possession of anyone engaged in commercial fishing (only one assistant can be listed) to help control use.
3. Specific equipment permitted to be listed on SUP if different than state regulation.
4. Commercial fishing operations will be conducted during daylight hours only.
5. Nets may not be set in such a manner as to obstruct recreational fishing boat access.
6. Restrictions may apply to some species which are considered commercial by state regulations, such as paddlefish.. The presence of any species of concern may also require that nets are attended to at all times while on the refuge (immediate presence on the unit waters while nets are set).
7. All permittees will be required to report total harvest immediately after the permit period.

Justification: Commercial fishing is permitted within controlled or isolated refuge divisions, by issuance of Special Use Permits, to help control carp and other “rough” fish that compete with native fish for habitat. In addition, these fish stir up bottom sediments, increase turbidity, and forage in beds of submersed plants. Re-establishment and growth of submersed aquatic vegetation may be

inhibited by grazing fish such as carp. (Wiener et al. 1998). Populations of rough fish are reduced within refuge waters to improve water quality for growth of aquatic vegetation and to enhance habitat for native fish. Harvest of these species reduces renewable resource waste when conducted before a water level drawdown for habitat vegetation management purposes. These activities are seasonally regulated to prevent disturbance to wildlife populations.

Signature: Refuge Complex Manager:_____ (Signature and Date)

Concurrence: Regional Chief:_____ (Signature and Date)

Mandatory 10- or 15-year Re-evaluation Date: 2016

(This determination was prepared as a programmatic review of the use outlined in the Refuge Complex 2001 Comprehensive Conservation Plan. Future Compatibility Determinations prepared to address new or different site specific uses will be prepared at the individual refuge and signed by the Refuge Manager, Complex Manager and Regional Chief.)